

G. RIGOR'YEVA, N. Ye.

Structure and dyeing properties of p-phenylazo-substituted analogs of glutaric dialdehydes. N. E. Grigoreva and R. M. Zueva (Zh. obshch. Khim., 1956, 88, 107-111).— Two new pentamethine dyes were prepared, viz. chloride of 1-p-phenylazophenyleneamino-5-p-phenylazophenyleneamino-penta-1,3-diene I and 1-p-phenylazophenyleneamino-penta-1,3-dien-5-yl II. By reacting the pyridine salt of 2,4-dinitrochlorophenol with p-aminobenzaldehyde form hydrochlorides of p-phenylazo substituted analogs of glutaric dialdehydes. Cyclization of the quaternary salts of the former to p-phenylazochlorophenol pyridine salt and p-aminobenzaldehyde. The former easily converted to p-phenylazo substituted monomeric glutaric dialdehydes in alkaline media. The chromatic absorption of these dyes was determined in various solvents in the presence of NaOH, HCl, HOAc and H<sub>2</sub>CO<sub>3</sub>. Symmetrical dyes I easily dissolve in Me and Et alcohols, they dissolve more easily in glacial acetic acid and change to reddish-violet colours similar to those of benzidine deriv. in presence of alcohol (but differ in that by dilution of the solution the colour deepens). Max. and min. absorption vary according to strength of solution, absorption power in acetic acid being five times higher than in alcohol + HCl. Max. absorption of monomeric II in EtOH is 465 mμ and in acetone 495 mμ. amphoteric nature is shown by formation of coloured salts with acids and alkalis. Cations and anions in alcohol exhibit similar colours (max. absorption 530 mμ). Anion colours exhibit more stability than cations.

A. I. B.

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Reaction products of pyridine 2,4-dinitrochlorobenzylate with diamines. N. E. Gerasimova and I. K. Gintse (State Univ., Kharkov). *Zhur. Obshch. Khim.* 26, 237-9; *J. Gen. Chem. U.S.S.R.* 26, 249-54 (1954) (Engl. translation). Heating 5.2 g.  $[2,4-(\text{O}_2\text{N})_2\text{C}_6\text{H}_3\text{R}]\text{Cl}$  (R = pyridinyl) (I) with 4 g.  $p\text{-C}_6\text{H}_4(\text{NH}_2)_2$  (II) in EtOH 10 min. gave a dark ppt. which after washing with  $\text{H}_2\text{O}$  and  $\text{Me}_2\text{CO}$  left behind 76% 4,5-bis(*p*-phenylenediaminyl)-1,3-pentadien-5-ydene chloride, dark-red, m.  $167^\circ$  (contains 0.5 EtOH), for which a satisfactory crystn. solvent could not be found. Heating to  $128-133^\circ$  resulted in sublimation of some  $p\text{-C}_6\text{H}_4(\text{NH}_2)_2$ ; removal of the latter with hot  $\text{Me}_2\text{CO}$  gave a brown residue, which yielded 60% ( $p\text{-RC}_6\text{H}_4(\text{NH}_2)_2\text{Cl}$  (III), yellow (from EtOH-Et<sub>2</sub>O), m.  $252^\circ$ , which contained 0.5 mole EtOH; picrate, yellow, m.  $161^\circ$  (from EtOH and  $\text{H}_2\text{O}$ ). I (1 g.) and 1.3 g.  $\text{H}_2\text{NCl}$  salt heated in 5 ml. EtOH and 2 ml. pyridine 15 min. on steam bath gave a red ppt. (Initially violet), which after washing was chromatographed on  $\text{Al}_2\text{O}_3$  yielding green  $[p\text{-}(2,4-(\text{O}_2\text{N})_2\text{C}_6\text{H}_3\text{NHCH}:\text{CHCH}:\text{CHCH}:\text{NH})\text{C}_6\text{H}_4)_2\text{N}:\text{CHCH}:\text{CHCH}:\text{CHCH}:\text{CHNHCH}(\text{NO}_2)_2]$  (I), m.  $240^\circ$ ,  $\lambda_{\text{max}}$  (EtOH), 563 (EtOH-HCl), 600 (HClO<sub>4</sub>). Refluxed with pyridine 1 hr., filtered and evapd. this gave some dinitroaniline and III, isolated as the picrate; washing the residue with  $\text{H}_2\text{O}$  gave an unidentified green product. Heating I with  $p\text{-C}_6\text{H}_4(\text{NHAc})_2$  in EtOH gave 55% ( $p\text{-NHCH}:\text{CHCH}:\text{CHCH}:\text{CHCH}:\text{NHR}$ )Cl (IV, R' =  $p\text{-AcNH-C}_6\text{H}_4$ ), violet, m.  $147^\circ$  (from AcOH), which heated to its m.p. and treated with  $\text{H}_2\text{O}$  gave ( $p\text{-RC}_6\text{H}_4\text{NHAc}$ )Cl, m.  $276-7^\circ$  (from EtOH-Et<sub>2</sub>O); picrate, yellow, m.  $153^\circ$ . I and  $p\text{-Me}_3\text{CNC}_6\text{H}_4\text{NH}_2$  gave 57% violet IV (R' =  $p\text{-Me}_3\text{CNC}_6\text{H}_4$ ), m.  $147^\circ$  (from EtOH), which heated with  $\text{H}_2\text{O}$

**GAIGOR'YAN, N. E. GINTSE, I. K.**  
 gave 63% yellow ( $p\text{-RC}_6\text{H}_4\text{NMe}_2\text{Cl}$ ) (V), m. 114° (contains 1 mole EtOH). V as the HCl salt heated with 20% NaOH gave green 1-( $p\text{-dimethylaminophenyl}$ )-1,3-pentadien-5-ol, decomp. 240°,  $\lambda$  535 ( $\text{CH}_2\text{Cl}$ ), 480 ( $\text{Me}_2\text{CO}$ ), 470 (EtOH). I (1 g.) and 1.0 g. III heated 5 min. in EtOH, treated with 1 ml. pyridine and heated until I had reacted (2 hrs.) gave 0.9 g. orange-red solid, which reprecipitated from EtOH with  $\text{Me}_2\text{CO}$  gave pale yellow ( $p\text{-C}_6\text{H}_4\text{N}_2\text{Cl}$ ) (VI), m. 285° (from EtOH-Et<sub>2</sub>O) (contains 1.25 moles EtOH); *picrate*, m. 233°. I (23 g.) in EtOH heated with 18 g.  $m\text{-C}_6\text{H}_4\text{NH}_2$  0.5 hr. gave 10 g. brown-red IV ( $R' = m\text{-H}_2\text{NC}_6\text{H}_4$ ), m. 198-200° (contains 2 moles EtOH); heated to 182° to incipient melting, it gave a brown solid which was passed over  $\text{Al}_2\text{O}_3$  in EtOH and the effluent soln. treated with  $\text{Et}_2\text{O}$  yielding a brown solid, m. 258°, a compd. of 2 moles ( $m\text{-RC}_6\text{H}_4\text{NH}_2\text{Cl}$ ) (VI) and 1 mole diamine with 2 EtOH; the residual soln. treated with more  $\text{Et}_2\text{O}$  gave yellow needles of VI, m. 75° (contains 0.5 mole EtOH). I (1.2 g.) and 1 g.  $o\text{-C}_6\text{H}_4\text{NH}_2$  in EtOH heated 3 min. gave 0.2 g. almost black IV ( $R' = o\text{-H}_2\text{NC}_6\text{H}_4$ ), m. 160°. If the reagents were used in 3.8 g. and 3 g. amounts, resp., and heated 20 min. in EtOH, there formed 0.3 g. brown [2,4-( $\text{O}_2\text{N}$ ) $_2\text{C}_6\text{H}_3\text{NHC}(\text{CH}_3)=\text{CHCH}=\text{CHC}(\text{NHC}_6\text{H}_4\text{NH}_2)=\text{CH}$ ], m. 225° (which retains 1.5  $\text{H}_2\text{O}$ ); thermal decomp. gave di-*nitroaniline* and a tar. The benzidine deriv. of gluticonaldehyde was decompd. (cf. Tammes, *et al.*, *C.A.* 49, 10283d) and 3.4 g. of the yellow product was taken up in hot concd. HCl; on cooling the soln. was neutralized with  $\text{NH}_4\text{OH}$ , yielding yellow ( $p\text{-RC}_6\text{H}_4\text{NH}_2\text{Cl}$ ) (VI), m. 307° (from EtOH), which has 1  $\text{NH}_2$  group available for diazotization. This (0.5 g.) and 0.5 g. I heated in EtOH with 2 ml. pyridine 15 min. and kept 12 hrs. gave 57% red IV ( $R' = p\text{-H}_2\text{NC}_6\text{H}_4$ ) (VI), which does not melt, but decomp. on heating; the product,  $\text{C}_{20}\text{H}_{12}\text{N}_4\text{Cl}_2$ , contains 3 moles EtOH. Thus unsubstituted diamines can react with quaternary pyridinium salts in 2:1, 1:1, and 1:2 proportions. G. M. Kosolapoff

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 ✓ Influence of acids and alkalies on absorption spectra of pyridine dyes. N. E. Grigor'eva, I. K. Glushko, and A. P. Severina (State Univ., Kharkov). *Zhur. Obshch. Khim.* 26, 3090-104 (1958); cf. *C.A.* 50, 13778b. - Absorption spectra of several pyridine-base dyes were examd. in 90% EtOH, and in EtOH with varying amts. of HCl, CO<sub>2</sub> or AcOH; some spectra were examd. also in alc. solns. with varying amts. of NaOH. The pyridine dyes in aq. EtOH undergo hydrolysis which is more intense in cases of compds. with lower basicity of the cation; any acid added to the soln. shifts the equil. in the direction of the dye salt, while alkali shifts the equil. in the direction of the base if the dye contains electron-donor groups; with electron-acceptor groups the addn. of alkali yields deeply-colored anionic dyes. The aniline-base pyridine dyes are decolorized in concd. H<sub>2</sub>SO<sub>4</sub> owing to salt formation, these reverting to the original dyes on diln. The following abs. max. were noted in EtOH and EtOH with excess HCl, resp., for the following dyes of type RNH(CH<sub>3</sub>):NHRCI (R shown): Ph, 485 mμ, 485 mμ; *p*-MeC<sub>6</sub>H<sub>4</sub>, 495, 495; *p*-MeOC<sub>6</sub>H<sub>4</sub>, 600, 600; *p*-HOC<sub>6</sub>H<sub>4</sub>, 505, 505; *p*-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 600, 600; 1-C<sub>6</sub>H<sub>5</sub>, 410, 450, 2-C<sub>6</sub>H<sub>5</sub>, 420, 505; *p*-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 600, 600; *p*-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, 500, 600; *m*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 510; *p*-EtO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, 505, 505; *p*-HO<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>, 500, 600; *m*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, 510, 527. The various spectra are reproduced. Treatment of Na enolate of glutaraldehyde (prepd. from excess NaOH and pyridine-SO<sub>2</sub>) with *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NH<sub>2</sub> in EtOH, in the presence of a little HCl gave *N*-(*p*-nitrophenyl)-5-(*p*-nitrophenylimino)-1,3-pentadienyl-amine-HCl, violet, m. 143-4°, which retains EtOH.  
 G. M. K.

Products of reaction of  $\beta$ -picoline with 2,4-dinitrochlorobenzene. N. E. Orlov, I. K. Gintse, and N. O. Karpyuk (State Univ., Kharkov). *Zhur. Obshch. Khim.* 26, 8465-62 (1953); cf. *Uchenye Zapiski Khar'kov. Gosu. univ.* 10, 87 (1950).— $\beta$ -Methylpyridine was purified by treatment with  $\text{Cu}_2\text{Cl}_2$  and with mixt. of phthalic and acetic anhydrides refluxing 6 hrs. The pure material, b.  $144^\circ$ ; picrate, m.  $152^\circ$ . This (2.6 ml.) and 1.5 g. 2,4-dinitrochlorobenzene (I) heated briefly to form a soln., then treated with 20 ml. dry  $\text{Et}_2\text{O}$  and kept 1 day gave  $\beta$ -methylpyridine 2,4-dinitrochlorophenylate (II), m.  $160^\circ$ , in 45.5% yield. If the components are heated 6 min. at  $60^\circ$ , the same product forms. The salt treated with 15%  $\text{NaOH}$  gave the red monosalt of  $\beta$ -methylglutaronaldehyde, m.  $161^\circ$  (from  $\text{MeOH}$ ). Heating the salt with aromatic amines in  $\text{EtOH}$  at  $80-40^\circ$  gave on pptn. with aq.  $\text{HCl}$  the corresponding  $\beta$ -methylglutaronaldehyde (As shown):  $\text{Ph}$ , red-brown, m.  $145^\circ$ ,  $\lambda_{\text{max}}$  426 m $\mu$ ;  $p$ - $\text{MeOC}_6\text{H}_4$ , m.  $142^\circ$ , red-violet,  $\lambda_{\text{max}}$  495;  $p$ - $\text{EtOC}_6\text{H}_4$ , blue-violet, m.  $130^\circ$ ,  $\lambda_{\text{max}}$  495. In the prep. of II above there also formed a violet polymethine dye from the reaction of II with 2 moles  $\beta$ -methylpyridine; this substance pptd. from  $\text{MeOH}$  or  $\text{Me}_2\text{CO}$  with  $\text{Et}_2\text{O}$ , was analyzed as  $\text{C}_{16}\text{H}_{18}\text{N}_4\text{O}_2$ ,  $\text{Cl.D.S. Me}_2\text{CO}$ , m.  $167^\circ$  (from  $\text{MeOH}$ ), or m.  $169^\circ$  (from  $\text{Me}_2\text{CO}$ ); this passed over  $\text{Al}_2\text{O}_3$  gave an upper yellow zone, and lower violet zone. The latter eluted with  $\text{Me}_2\text{CO}$  gave the pure polymethine (III), contg. 13.7% N and 11.6-12% Cl, deep violet, m.  $130^\circ$  (heated over  $\text{P}_2\text{O}_5$  at  $78^\circ$  1 hr. it gave some I in the sublimate and gave pure  $\text{C}_{16}\text{H}_{18}\text{N}_4\text{O}_2$ , a dark solid). The yellow chromatographic zone,

N. E. Gerasimova, E. K. Gerasimova and N. E. Gerasimova  
 above, gave a brown solid which was a decompos. product of the polymethylene compound, infusible and apparently  $C_{10}H_{14}N_2$ . It was also cleaved by pyridine at  $130^\circ$  in 6-7 min., yielding  $C_{10}H_{14}N_2 \cdot H_2O$ , m.  $103-71^\circ$ , apparently a pentamethylene dye of I and pyridine; pyridine did not decompose, pyridine 2,4-dinitrochlorophenylate at  $130^\circ$ . III repeatedly treated with MeOH gave a deep violet base (IV),  $C_{10}H_{14}N_2$ , decomp.  $147^\circ$ , on treatment with aq.  $Na_2CO_3$ . III with aq. MeOH NaOH gave a blue color followed by pptn. of colorless 2,4-dinitroanisole. IV was apparently 1,4- $C_6H_4N_2 \cdot CHCl_3$ ;  $CHCl_3$ ;  $CHCl_3$ ;  $CHCl_3$ ; Me:  $CHCl_3$ ;  $CHCl_3$ .  
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Distr: 4E43/4E3d

Catalytic hydrogenation of *N*-aryl substituted pyridine salts. N. E. Grigor'eva, A. B. Chumachenko, and I. A. Mysh (State Univ. Leningrad). *Zhur. Obshch. Khim.* 27, 1955 (1957). — *N*-Arylpyridinium chlorides were prepared according to Zincke (Ann. 333, 329 (1904)) without isolation by heating pyridine 2,4-dinitrochlorophenylate with amines in EtOH followed by distn. of EtOH and heating the residue with H<sub>2</sub>O until the dye was completely decomposed; dinitroaniline and amine were filtered off and the filtrate, after washing with H<sub>2</sub>O and treatment with C, was evaporated to yield the desired arylpyridinium chloride. Hydrogenation of pyridine chlorophenylate in MeOH over PtO<sub>2</sub> gave *N*-phenylpiperidine HCl salt, m. 204°; picrate, m. 129-30°. Similarly were obtained: *N*-p-tolylpiperidine HCl salt, m. 200-1° (picrate, m. 171°); *N*-p-aminylpiperidine HCl salt, m. 180-7° (picrate, m. 170-7°); *N*-p-carboxyphenylpiperidine HCl salt, m. 173-4° (picrate, m. 149°); *N*-p-aminophenylpiperidine HCl salt, m. 190-200° (picrate, m. 132°); *N*-p-aminobiphenylpiperidine, a yellowish powder, whose HCl salt could not be purified. Hydrogenation of the HCl salt of *p*-(p-H<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>)C<sub>10</sub>H<sub>7</sub>N:CH:CH:CH:CH:CHNH<sub>2</sub>·C<sub>6</sub>H<sub>5</sub>(C<sub>10</sub>H<sub>7</sub>NH<sub>2</sub>·p) gave silvery plates of C<sub>22</sub>H<sub>24</sub>N<sub>2</sub>Cl<sub>2</sub>·H<sub>2</sub>O, which did not melt; this with NaOH gave *N*-p-aminobiphenylpiperidine, m. 112°. G. M. Komolantsev

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Pentamethine (Pyridine) dyes. Uch. zap. KHGU 95:207-230 '57.  
(Pyridine) (Dyes and dyeing) (MIRA 12:10)



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Catalytic activity of diatomite. Bent. gliny Ukr. no.2:136-140  
'58. (MIRA 12:12)

1.Khar'kovskiy gosudarstvennyy universitet.  
(Catalysts) (Diatomite)

AUTHORS: Grigor'yeva, N. Ye., Pechka, A. A. SOV/79-26-6-54/63

TITLE: Monoanils of Glutaconedialdehyde (Monoanily glutakonovogo dial'degida) I. Derivatives of Primary Aromatic Amines (I. Proizvodnyye pervichnykh aromaticeskikh aminov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1677 - 1681 (USSR)

ABSTRACT: Of the derivatives of primary amines only the dinitro-substituted ones were known (Ref 1). One of the authors synthesized the corresponding anilinederivatives and other primary aromatic amines (Refs 4,5). However, the nature of these compounds was not investigated in detail as their yields were too small. In order to investigate similar compounds more closely the authors elaborated a method of synthesis of the derivatives of aniline and of other amines; in some cases they obtained considerable yields, and the authors could investigate their condensability with aromatic amines and compounds containing active methyl groups. The condensation of the monoanils with aromatic amines was carried out under different conditions: in acetic acid in the presence of hydrochloric acid, in acetic anhydride in the presence of hydrogen chloride and in pyridine in the presence of hydrogen

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Monoanils of Glutaconedialdehyde. I. Derivatives of Primary Aromatic Amines SOV/79-28-6-54/63

chloride. Only in the last mentioned case a color change occurred, which could be taken as an indication as to the nature of the process of reaction, however, no definite result could be achieved. The investigations carried out of the monoanils of glutacone aldehyde showed in any way that they are of amphoteric character. Their condensability with compounds having active methyl groups can serve as indirect proof of the structure of the obtained monoanils. Thus the monoanils of glutacone aldehyde are investigated as derivatives of aromatic amines. It was shown that the unsubstituted monoanil and the monoanils of glutacone aldehyde with nucleophilic substituents in the aromatic nuclei do not enter the condensation with aromatic amines. The condensation of some monoanils with the methiodide of 2-methylbenzthiazole was carried out, however, the structure of the initial products could not be determined. There are 2 tables and 9 references, 3 of which are Soviet.

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Monoanils of Glutaconedialdehyde. I. Derivatives of SOV/79-28-6-54/63  
Primary Aromatic Amines

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet (Khar'kov State  
University)

SUBMITTED: May 12, 1957

1. Aniline derivatives--Synthesis

Card 3/3

AUTHORS: Grigor'yeva, N. Ye., Gintse, I. K. 301/79-28-6-55/63

TITLE: ~~Monoanils of Glutacone~~ Aldehyde (Monoanily glutakonovogo dial'-degida) II. The Influence of the Medium on the Color of the Derivatives of Primary Aromatic Amines (II. Vliyaniye sredy na okrasu proizvodnykh pervichnykh aromaticeskikh aminov)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1682 - 1689 (USSR)

ABSTRACT: The problem concerning the influence of the medium on the color of the organic compounds has interested scientists already since long. The unsalty intraionic dyes are especially sensitive to changes of the medium. Many hypotheses have already been suggested for this problem (Refs 1-5). That by Kiprianov and his collaborators is widely acknowledged (Ref 6) as are those by other authors (Ref 7) who deal with the dependence of the color change of the intraionic dyes on the polarity of the solvent. According to this conception the dyes are divided into three types: Some deepen the color with the decrease of the dielectric constant of the solvent (1<sup>st</sup> type), the others increase it on the same conditions (2<sup>nd</sup> type), and the rest have an intermediate position (3<sup>rd</sup> type). The monoanils of glutacone aldehyde as derivatives

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Monoanils of Glutacone Aldehyde. II. The Influence of SOV79-28-6-55/63  
the Medium on the Color of the Derivatives of Primary Aromatic Amines

of the primary aromatic amines are tautomeric compounds the structure of which can be represented by the mentioned formulae of scheme 1. They belong to the intraionic compounds. Each of the mentioned formulae can be represented in form of a dipolar ion. They easily react on changes of the medium by changing their own color in various "neutral" solvents and in the presence of acids and alkali liquors. However, different from the earlier investigated intraionic compounds (Refs 6,7) no fixed dependence of the color change on the polarity of the solvent was noticed. Therefore the authors had to investigate this problem more in detail: The relatively good solubility of the monoanils made it possible to determine their absorption spectra in many organic solvents. Thus eight monoanils of glutacone aldehyde were investigated this way. It was shown that the absorption change of these monoanilines in various solvents is connected with the structure of the complexes of the monoanil as well as with the solvent as such in the case of an equivalent possibility of conversion. Thus some considerations on the causes of the color change of the monoanils of glutacone aldehyde in various solvents, in the presence of acids and alkali liquors are mentioned.

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Monoanils of Glutac~~one~~ Aldehyde. II. The Influence of 30479-28-6-55/63  
the Medium on the Color of the Derivatives of Primary Aromatic Amines

It is shown that there is no principal difference between  
solvatochromism and halochromism. There are 4 figures, 3 tables  
and 13 references, 4 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet (Khar'kov State Uni-  
versity)

SUBMITTED: April 12, 1957

1. Organic compounds--Chemical properties

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5 (3)

SOV/79-29-3-24/61

AUTHORS:

Grigor'yeva, N. Ye., Gintse, I. K., Afanas'yeva, Z. M.

TITLE:

Pyridine Dyes, Derivatives of the Secondary Amines (Piridinovy-ye krasiteli-proizvodnyye vtorichnykh aminov)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 865-869 (USSR)

ABSTRACT:

There are only little data available on these dyes (Refs 1,2). As to color and chemical properties they are considerably differing from the corresponding derivatives of the primary amines. It can be seen from a comparison of the data presented in table 1 that the unsubstituted dye is colored more intensely than the corresponding N-alkyl-substituted dyes and that the substitution of the phenyl radicals for the hydrogens of the amino groups is without any effect on the shift of the absorption maximum. The aniline derivative is readily hydrolyzed; the acid suppresses hydrolysis; in acid solution the extinction coefficient increases by more than two times whereas the absorption intensity of the secondary amine derivatives is hardly changed by the addition of acid. It could be concluded from a comparison of the data given in table 1 that the derivatives of the secondary amines are not hydrolyzable.

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Pyridine Dyes, Derivatives of the Secondary Amines

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Table 1 illustrates the results of the optical changes of the freshly prepared solutions; on the determination of the variation in the color intensity of the dyes in the time course, in dependence on the concentration, it can be seen that the derivatives of the secondary amines hydrolyze as well, the more rapidly the less the basicity of the cation and the concentration of the dye is. As can further be seen the N-methyl-substituted dye hydrolyzes least, considerably, however, the diphenylamine derivative. These facts show that the hydrolysis of derivatives of the secondary amines is also related to the basicity of the cation the degree of which is determined not only by the nature of the radical but also by its volume. Figures 1 and 2 present the absorption spectra of the dyes of the diphenylamine and methylaniline derivatives in neutral, alkaline and acidified alkaline medium. Figures 3 and 4 give the spectra of the corresponding monoanils of the glutamic aldehyde. Four N-substituted pyridine dyes and two monoanils of the glutamic aldehyde were synthesized. Four preparations are new. It is assumed that the peculiarities in the dyeing of the N-alkyl-substituted dyes and their cleavage

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Pyridine Dyes, Derivatives of the Secondary Amines

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under the influence of alkali liquor are due to difficulties of the spatial arrangement which is indicated by their absorption spectra. There are 4 figures, 3 tables, and 9 references, 2 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet (Khar'kov State University)

SUBMITTED: January 28, 1958

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5(3)

AUTHORS: Grigor'yeva, N. Ye., Voynova, V. N. SOV/79-29-3-37/61  
and Dukina, L. M.

TITLE: Unsymmetrical Pyridine Dyes (Nesimmetrichnyye  
piridinovyye krasiteli)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3,  
pp 935-940, (USSR)

ABSTRACT: It is known that the color of the unsymmetrical dyes  
represents in a certain degree a "molecular mixture"  
of the corresponding symmetrical dyes; the color of the  
unsymmetrical dyes has, however, not always an additive  
character (Ref 1). The authors completed the chemical  
and spectroscopic investigations reported in references  
2-5 and analyzed the absorption spectra of 17 pyridine  
dyes obtained by them according to Zinke (Ref 6). These  
dyes were synthesized by the condensation of the  
N-substituted monoanils of the glutaconic aldehyde with  
aromatic amines in the presence of acid according to the  
well-known scheme 1. In order to avoid the disagreeable  
intensification of the color of the alcohol solutions of

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Unsymmetrical Pyridine Dyes

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the dyes by hydrolysis hydrochloric acid was added to the alcohol solutions in the spectroscopic investigation of unsymmetrical dyes. Table 1 gives the data of the optical determinations of the unsymmetrical and the corresponding symmetrical pyridine dyes. The maximum values of the symmetrical dyes, the secondary amino derivatives, are presented in column (I), the primary amino derivatives in column (II), the calculated

additive maximum in column  $\frac{(I)+(II)}{2}$ . By a comparison of the data given in table 1 it can be seen that the color of eight dyes (2,3,5,8,10,12,13,16) is of additive nature, that in six dyes (1,4,6,7,11,14) a hypsochromic shift from the additive maximum is observed and that in three dyes (9,15,17) the maximum moves in the direction of the long waves. It is thus seen in most of the cases that the change in the color depends on the change of the basicity of the amines which form the molecule of the unsymmetrical dye (according to Kiprianov, A. I. and Pilyugin, G. T.).

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Unsymmetrical Pyridine Dyes

307/79-29-3-37/61

There are 2 tables and 9 references, 6 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet (Khar'kov State University)

SUBMITTED: January 28, 1958

Card 3/3

5.3610

78305

SOV/79-30-3-59/69

AUTHORS: Grigor'yeva, N. Ye., Gintse, I. K., Lyubitskaya, T. A.

TITLE: Products of Hydrogenation of N-phenylpyridinium Chloride. Condensation of N-phenylpiperidinium Hydrochloride With p-Dimethylaminobenzaldehyde

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 3, pp 1031-1037 (USSR)

ABSTRACT: This is a continuation of previous work (N. Ye. Grigor'yeva, A. B. Organes'yan, I. A. Mysh, ZhOKh, 27, 1565, 1957) on hydrogenation of N-phenylpyridinium chloride (I) over a platinum catalyst under different conditions. The method used was described previously (see above reference). Condensation of N-phenylpiperidinium hydrochloride (II) with p-dimethylaminobenzaldehyde (III) was also studied. It was found that an hydrogenation of (I) over a platinum catalyst, a mixture of N-phenyl- and N-cyclohexylpiperidinium hydrochlorides is formed. The

Card 1/3

Products of Hydrogenation of N-phenylpyridinium  
Chloride

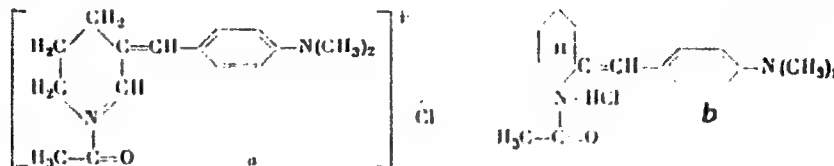
78305  
SOV/79-30-3-59/69

hexylpiperidinium hydrochlorides is formed. The ratio of the two hydrochlorides in the mixture depends on the conditions of hydrogenation. Condensation of (II) with (III) in acetic anhydride first forms a blue dye. The latter is unstable and on heating decomposes with formation of a red dye. The blue dye was not isolated. Its color is very close to that of Michler's benzhydrol, and it is possible that they are analogs. The red dye is slightly soluble in water, more soluble in alcohol and dichloroethane. It does not crystallize, and has the following absorption maxima: in alcohol 496, in water 504, and in dichloroethane 504 m $\mu$ . It is suggested that the red dye is a salt with structure a:

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Products of Hydrogenation of N-phenyl-  
pyridinium Chloride

76305  
SOV/79-30-3-59/69



There are 2 figures; 2 tables; and 5 references,  
1 U.S., 2 German, 2 Soviet. The U.S. reference is:  
C. F. Winans, H. Adkins, J. Am. Chem. Soc., 54, 306  
(1932).

ASSOCIATION: Kharkov State University (Kharkovskiy gosudarstvennyy  
universitet)

SUBMITTED: September 1, 1958

Card 3/3



GRIGOR'YEVA, N.Ye.; KRUGLYAK, L.P.; SHCHERBAKOVA, L.I.

Absorption spectra and structure of glutaconaldehyde dianils.  
Zhur.ob.khim. 31 no.8:2599-2604 Ag '61. (MIRA 14:8)

1. Khar'kovskiy gosudarstvennyy universitet.  
(Glutaconaldehyde) (Amines—Spectra)

GRIGOR'YEVA, N.Ye.; SHCHERBAKOVA, L.I.; GINTSE, I.K.

Catalytic hydrogenation of dianils of glutaconaldehyde and their salts (pyridine dyes). Ukr.khim.zhur. 28 no.7:848-851 '62. (MIRA 15:10)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo.  
(Dyes and dyeing) (Glutaconaldehyde) (Aniline)

GRIGOR'YEVA, N.Ye.; RODIONOVA, L.A.; SHCHERBAKOVA, L.I.; TYUPA, D.P.

Certain transformations of glutaconaldehyde dianils. Zhur.  
ob.khim. 32 no.2:493-501 P '62. (MIRA 15:2)

1. Khar'kovskiy gosudarstvennyy universitet.  
(Glutaconaldehyde)

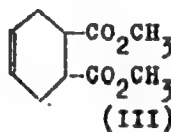
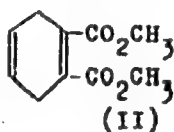
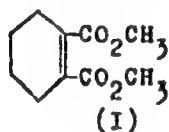
S/062/63/000/002/004/020  
B144/B186

AUTHORS: Mayranovskiy, S. G., Grigor'yeva, N. Ya., Barashkova, N. V.,  
and Kucherov, V. F.

TITLE: Conjugation factors in cyclo systems. Communication 6.  
Polarographic and potentiometric study of electron interaction  
effects in cyclohexadiene-1,2 dicarboxylic acids and their  
methyl esters

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh  
nauk, no. 2, 1963, 240 - 245

TEXT: Cyclohexene and cyclohexadiene-1,2 dicarboxylic acids and their  
dimethyl esters were studied polarographically and potentiometrically to  
clear up the problem of possible interactions between the double bonds of  
the ring. The polarograms of

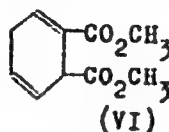
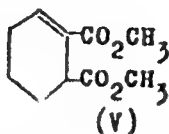
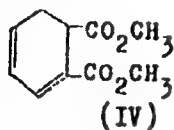


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Card 1/3

Conjugation factors in...

S/062/63/000/002/004/020  
B144/B186



were taken at 25°C using 0.05 M tetramethyl ammonium iodide solution containing 9.5% by volume ethanol. The effect of pH and ionic strength was investigated in borate buffer solutions (pH 7 - 10.5), 0.1 N NaOH, and potassium chloride solutions. The anode was an Hg electrode, the reference electrode was a calomel half-cell. The ionization constants were determined at ~20°C and initial concentrations of ~0.001 M. For all compounds except III the reduction wave was pH-independent. For I, II, V, VI the ion transfer number is 2, the diffusivity  $6.5 \cdot 10^{-6}$  cm<sup>2</sup>/sec. The polarographic curves showed two steps; the difference between their  $E_{1/2}$  could be altered

neither by increasing the depolarizer concentration nor by raising the temperature and ionic strength of the solution nor by varying the height of the Hg column. This indicates that the two reduction steps are irreversible and occur due to hydrogenation of the double bond involving formation of a relatively stable free radical intermediate. In IV, the two double bonds

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Conjugation factors in...

8/062/63/000/002/004/020  
B144/B186

are hydrogenated successively. Electrochemical reduction was absent in ~~II~~ <sup>III</sup>, where the double bond is conjugated with neither of the two  $\text{CO}_2\text{CH}_3$  groups...

All this was confirmed by the analogous relation between ionization constants and structures of the corresponding acids. It was found that the ester is more easily reduced and the dissociation constant of the acid increases on conversion of I and V into II and VI respectively. Since the steric interaction of the atoms does not change, these effects must be attributed to an electron interaction between the isolated double bonds in II and VI. There are 3 figures and 1 table.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskii of the Academy of Sciences USSR)

SUBMITTED: May 18, 1962

Card 3/3

BELOV, I., inzh.; GRIGOR'YEVA, O., inzh.

"Topaz-2" and "Start-2" pocket radios. Radio no.9:38-39 S'63.(MIRA 16:12)

1. Institut radioveshchatel'nogo priyema i akustiki imeni A.S.  
Popova.

GRIGOR'YEVA, O. A.: Master Med Sci (diss) -- "Clinical observations in acute hepatitis treated with intravenous drop transfusion of glucose". Leningrad, 1959. 17 pp (Leningrad Pediatric Med Inst), 250 copies (KL, No 13, 1959, 111)



KHOKHLOV, V.V.; GRIGOR'YEVA, O.A.; RIVLINA, N.Ya.

Accuracy of the spectrum determination of the content of a series  
of elements in metallometric samples. Zap. LGI 39 no.2:149-162  
'61. (MIRA 15:2)

(Ores--Sampling and estimation)

GRIGOR'YEVA, O.A.; KUYATKOVSKIY, Ye.M.

Highly sensitive double-arc method of spectrographic analysis  
for the detection of gold and some disseminated elements.  
Zap. LGI 45 no. 2:74-80 '63. (MIRA 17:5)

L 11072-65 EWT(m)/KPF(c)/EWA(d)/EPR/EWP(j)/T Pc-Li/Pr-Li/Ps-Li/P1-Li RPL/  
AFMDC/AFETR/ASD(a)-5/ESD(dp) RM/WM/JW/JD

ACCESSION NR: AT4047300

S/3115/64/000/021/0344/0358

AUTHOR: Burovoy, I. A.; Yemel'yanov, S. V.; Morozova, M. S.; Grigor'yeva, O. A. (6)

TITLE: The use of variable structure feedback systems in the control of thermo-chemical heterogeneous processes.

SOURCE: Moscow. Gosudarstvennyy Institut tsvetnykh metallov. Sbornik nauchnykh trudov, no. 21, 1964. Matematicheskiye modeli tekhnologicheskikh protsessov i razrabotka sistem avtomaticheskogo regulirovaniya s peremennoy strukturoy (Mathematical models of technological processes and development of variable structure feedback systems), 344-358

TOPIC TAGS: variable parameter control system, automatic regulation, heterogeneous process, thermochemical process.

ABSTRACT: The most convenient and effective regimes for thermochemical heterogeneous processes cannot be controlled by linear methods because the variables which must be controlled are described by nonlinear differential equations with unstable singularities in the phase plane. The stability of these points depends largely on initial conditions, so that in order to accommodate realistic disturbances in the system, feedback controls with variable structure must be used. Using the method of multi-sheeted phase planes, developed by V. V. Petrov and Card 1/2

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ACCESSION NR: AT4047300

2

G. M. Ulanov, the authors studied the phase plane topology as a function of the sign and magnitude of the static gain coefficient  $K_p$  of the control system. This is done by assuming a process with two singularities only, deriving the expressions for their phase plane coordinates for processes limited by constant velocity of the surface chemical reaction or concentration of the gaseous component, or by both, and investigating the behavior of these coordinates as  $K_p$  changes. It was discovered that if  $K_p = K_{p, \text{crit.}}$ , both singularities change places and if  $K_p \neq K_{p, \text{crit.}}$ , then  $K_p$  does not influence the coordinates very much. This leads to the conclusion that if the system structure ( $K_p$ ) is varied during the transient process, the system can be organized in such a way that it will return to the origin from any given initial point and will have a very wide (sometimes unlimited) stable region. Orig. art. has: 13 equations and 8 figures.

ASSOCIATION: Gosudarstvennyy Institut tsvetnykh metallov, Moscow (State Institute of Non-Ferrous Metals)

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, MM

NO REF SOV: 003

OTHER: 002

Card 2/2

GRIGOR' YEVA, O.D. (Leningrad)

Intravenous drip infusions of glucose in Botkin's disease. Klin.med.  
35 no.8:106-109 Ag '57. (MIRA 10:11)

1. Iz fakul'tetskoy terapevticheskoy kliniki (zav. kafedroy -  
zasluzhennyy deyatel' nauk prof. V.A.Val'dman) Leningradskogo  
pediatricheskogo meditsinskogo instituta.

(HEPATITIS, INFECTIOUS, ther.

glucose, intravenous drip infusions)

(GLUCOSE, ther. use

infect.hepatitis, intravenous drip infusion)

GRIGOR'YEVA, O.D., kand.med.nauk

Dynamics of serum protein fractions in acute hepatitis. Vop.  
pat. krovi i krovoobr. no.5:69-81 '59. (MI:A 15:4)  
(HEPATITIS, INFECTIOUS) (BLOOD PROTEINS)  
(PAPER ELECTROPHORESIS)

GRIGOR'YEVA, O.D., kand.med.nauk

Electrophoretic studies of blood protein fractions and hemo-  
sedimentographic observations in rheumatic fever. Vop.pat.  
krovi i krovoobr. no.6:73-79 '61. (MIRA 16:3 )  
(RHEUMATIC FEVER) (BLOOD--SEDIMENTATION) (BLOOD PROTEINS)

SMIRNOVA, A.M., kand.med.nauk; GRIGOR'YEVA, O.D., kand.med.nauk

Clinical serological parallels in rheumatic fever. Vop.pat.krovi  
i krovoobr. no.6:80-88 '61. (MIRA 16:3)

1. Iz Fakul'tetskoy terapevticheskoy kliniki Leningradskogo pedia-  
tricheskogo meditsinskogo instituta (zav. - prof. V.A. Val'dman)  
i Otdela mikrobiologii Instituta eksperimental'noy meditsiny AMN  
SSSR (zav. - chlen-korrespondent AMN prof. V.I. Ioffe).  
(RHEUMATIC FEVER) (SEROLOGY)



Grig. BILAL, ...; ...

Some clinical and laboratory observations in ... fever and focal  
infections. Trudy LIII 31 no.2:336-348 '63. (XIRA 17:19)

1. Iz fakul'tetskoy terapevticheskoy kliniki Leningradskogo pedia-  
tricheskogo meditsinskogo instituta i Odelskogo mikrobiologii instituta  
epidemiologii i mikrobiologii ANU SSSR.

Grigor'yeva, O. G.

Grigor'yeva, O. G., Resistance of coasts built by to wave action, Tr. Gos. gidrolog. in-ta (Works of the State Hydrological Institute), No 69, 1959, p 5-26;  
(RZhGeofiz 1/60-293)

GRIGOR'YAN, O. G., Cand Geogr Sci (diss) - "The resistance to wave action of shorelines composed of cohesive and semirock stone". Leningrad, 1960. 17 pp (Leningrad Order of Lenin State Univ A. A. Zhdanov), 225 copies (KL, No 15, 1960, 132)

GRIGOR'YEVA, O.G.

Laboratory determination of the resistance of rocks to  
the action of waves. Trudy GGI no.74:71-88 '60.  
(MIRA 13:7)

(Rocks--Testing) (Beach erosion)

GRIGOR'YEVA, O.G.

Comparing calculated and natural profiles of coastal shallows.  
Trudy GGI no.88:59-76 '61. (MIRA 15:2)  
(Coasts)

GRIGOR'YEVA, O. O.

General forecast of changes in the banks of the Volgograd  
Reservoir, Trudy GGI no.108:68-88 '63. (MIRA 16:6)

(Volgograd Reservoir—Shore lines)

GREGOR'JEVA, G.S.

Verification of the justification of forecasting the change  
of the banks of the Volgograd Reservoir. Trudy GGI no.116:  
190-194 '64. (MIRA 17:12)

SHAPIRO, I.I.; PEDOTOV, F.G. Primalni uchastiye: PEGUSHEV, M.Ye.;  
GRIGOR'YAVA, O.I.; POPOVA, L.P.; GONCHAROV, M.Ya.; VOLNISTOVA,  
E.V.; SOROKINA, G.Ye., tekhn.red.

[General machinery industry time norms for establishing norms  
for milling machine operations; small-lot and piece production]  
Obshcheyemashinostroitel'nye normativy vremeni dlia tekhnicheskogo  
normirovaniia rabot na frezernykh stankakh; melkoseriinoe i edi-  
nichnoe proizvodstvo. Moskva, Gos.nauchno-tekhn.izd-vo mashino-  
stroit.lit-ry, 1960. 142 p.

(MIRA 14:4)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po  
trudu. 2. Zaveduyushchiy otdelom mashinostroyeniya TSentral'-  
nogo byuro promyshlennykh normativov po trudu pri Nauchno-  
issledovatel'skom institute truda (for Shapiro).  
(Metalwork--Production standards)



GRIGOR'YEVA, O.P.

V.G.Shtefko as a scientist and teacher. Biul.MOIP.Otd.biol. 67  
no.5:150 S-O '62. (MIRA 15:10)  
(SHTEFKO, VLADIMIR GERMANOVICH, d.1945)

POLUSHINA, T.V.; RUDNITSKAYA, M.Z.; GRIGOR'YEVA, O.V.

Antishock fluid on the basis of plasma albumin in donor blood.  
Probl. gemat. i perel. krovi 5 no.3:52-55 Mr '60. (MIRA 14:5)

1. Iz Tsentral'nogo ordena Lenina instituta gematologii i perelivaniya  
krovi (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A.Bogdasarov).  
(SHOCK) (ALBUMINS--THERAPEUTIC USE)

GRIGOR'YEV, O.V. and KEL'ZON, A.S.

"The Dynamics of Proportional Navigation." Notes of the Leningrad  
Higher Engineering Naval Academy im. admiral S.O. Makarov, Issue 5  
1957.

AUTHOR: Kel'zon, A.S. and Grigor'yeva, O.V. SOV/20-121-3-10/47  
(Leningrad)

TITLE: The Proportional Navigation as a Problem of Cybernetics  
(Proportsional'naya navigatsiya kak problema kibernetiki)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 3, pp 432-435 (USSR)

ABSTRACT: Starting from the papers of Newell [Ref 1] and Spitz [Ref 2] who investigated the kinematics of guided missiles, the authors consider the dynamics of guided missiles under proportional navigation and the suitable choice of a control of motion which would guarantee a stable tending of the object to the target. The consideration of the dynamic equations for the considered motion admits to explain partially the apparent discrepancies (the necessity of non-hitting) in the papers of Locke [Ref 6] and Adler [Ref 9] .  
There are 10 references, 3 of which are Soviet, and 7 American.

ASSOCIATION: Leningradskoye vyssheye inzhenernoye morskoye uchilishche imeni admirala Makarova (Leningrad Higher School of Naval Engineering imeni Admiral Makarov)

PRESENTED: March 27, 1958, by V.I. Smirnov, Academician

Card 1/2

S/147/61/000/004/003/021  
EO31/E184

10.1240

AUTHORS: Grigor'yeva, O.V., and Kel'zon, A.S.

TITLE: The calculation of control inertia in certain guidance problems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, no.4, 1961, 22-29

TEXT: It has been shown that all estimates of manoeuvrability based on the value of the normal acceleration of the centre of inertia are inadequate. The conditions of stable missile guidance with consideration of the inertia of the controlling airfoil are discussed for the following cases of homing: 1) with a zero lead angle (pure pursuit course); 2) with a constant lead angle (deviated pursuit course); and 3) with the use of the proportional navigation course (approach). The limit values, in pursuit courses, of the velocity and acceleration of the control-flap declination in the final stage of approach are determined from given formulae for certain values of  $k = v_s/v$  ( $v_s$  = speed of the target,  $v$  = speed of missile inertia centre). In the proportional navigation course

Card 1/2

The calculations of control inertia.. S/147/61/000/004/003/021  
E031/E184

equations of motion are given for the navigational correction  $\Lambda = 2$ ; the solution shows the relationship between the angle of control-flap declination and the lead angle. This relationship ensures that the controlled object will follow the trajectory exactly. The condition for hitting the target is  $p > 1$  ( $p = 1/k$ ). The stability boundaries for guidance of the missile in the final stage are calculated from the turning rate of the path, while velocity and acceleration are determined from the control-flap declination. The results are plotted in a diagram from which the effect of the control-flap inertia can be determined. Since the pursuit courses are particular cases of the proportional navigation course with  $\Lambda = 1$ , it is concluded that the increase of the navigational correction widens the stability boundaries in the guidance of a missile in the final stage of its flight. There are 1 figure and 2 tables.

ASSOCIATION: Kafedra teoreticheskoy mekhaniki, Leningradskoye  
vyssheye inzhenernoye morskoye uchilishche  
(Department of Theoretical Mechanics, Leningrad  
Naval Engineering High School)

Card 2/2

SUBMITTED: January 23, 1961

GRIGOR'YEVA, O.V.; KEL'ZON, A.S.

Considering the inertia of the rudder in some problems of  
pinpointing. Izv.vys.ucheb.zav.; av.tekh. 4 no.4:22-29 '61.  
(MIRA 15:2)

1. Leningradskoye vyssheye inzhenernoye morskoye uchilishche.  
kafedra teoreticheskoy mekhaniki.  
(Bombing, Aerial)

FEDOROVA, L.I.; GRIGOR'YEVA, O.V.; KOZINETZ, G.I.

Preparation of plasma by formation of increased pressure in  
flasks. Probl. gemat. i perel. krovi 9 no.3:57-58 Mr '64.

(MIRA 17:10)

1. Tsentral'nyy ordena Lenina institut gematologii i perelivaniya  
krovi (dir.- dotsent A.Ye. Kiselev) Ministerstva zdravookhraneniya  
SSSR.



GRIGOR'YEVA, P.V., dots.

A.P. Koni and his work in the field of Russian forensic medicine.  
Trudy LMI 2:295-300 '55 (MIRA 11:8)

1. Kafedra sudebnoy meditsiny (zav. - prof. A.P. Kurdyumov)  
Pervogo Leningradskogo meditsinskogo instituta imeni akademika  
I.P. Pavlova.

(KONI, ANATOLII FREDOROVICH, 1844-1927)  
(MEDICAL JURISPRUDENCE)

DONIGEVICH, M.I., kand.med.nauk; GRIGOR'YEVA, R.I., kand.med.nauk; ZHUCHKOVA,  
L.O.; KADOMTSEVA, P.P.; SHEINOVA, N.P. (Mordovskaya ASSR)

Organization of psychoprophylactic preparations for all parturients  
in Saransk. Vop.okh.mat. i det. 4 no.5:74-78 S-0 '59.

(MIRA 13:1)

(SARANSK--CHILDBIRTH--PSYCHOLOGY)

SOV/110-59-6-3/24

AUTHOR: Sakovich, A.A., Candidate of Technical Sciences;  
Grigor'yeva, R.I., Engineer; Grigor'yev, V.S., Engineer  
and Blond, I.V., Engineer

TITLE: An Investigation of a Titanium Absorption Pump  
(Issledovaniya titanovogo absorbtzionnogo nasosa)

PERIODICAL: Vestnik elektromyshlennosti, 1959, Nr 6, pp 13-16 (USSR)

ABSTRACT: Existing types of vacuum pump are subject to various operating difficulties when installed on high-voltage valves. The pump here described is based on the principle that titanium does not react with mercury but can absorb gas when hot. Hot titanium reacts irreversibly with most gases and volatile organic compounds. These substances penetrate the crystal lattice of the titanium, forming solid solutions. Except for hydrogen, gases thus absorbed are not released during subsequent heat-treatment under vacuum. This principle formed the basis of the model absorption pump which is illustrated diagrammatically in Fig 1. The absorber is a block of porous titanium containing a heater. Because different parts of the block are heated to different temperatures different gases are absorbed. The device

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An Investigation of a Titanium Absorption Pump

was found to be fairly effective at pressures between 0.5 and 0.001 mm Hg. As porous titanium contains a considerable quantity of occluded gas, prolonged de-gasification was necessary. The device does not absorb inert gases and evolution of hydrogen is possible if the thermal conditions are unsuitable. Titanium absorbs gases best when it is condensing on a surface and attempts have been made to use this principle in the construction of pumps. However, as pumps of this kind are complicated and unreliable, improved methods of atomising titanium were sought. It was accordingly decided to locate the titanium in the mercury cathode and atomise it by ionic bombardment in the presence of a cathode spot. A model absorption pump constructed on this principle is shown in Fig 2; it is installed in a high-voltage valve. Authors' certificate Nr 111517 of 11th March 1957 has been taken out by three of the above authors for this device. The titanium electrode is on the centre line of the valve and is surrounded by an auxiliary electrode at a positive potential. When

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SOV/110-59-6-3/24

## An Investigation of a Titanium Absorption Pump

negative potential is applied to the titanium electrode an ionic current passes causing atomisation. The atomised titanium is deposited on a screen and on the auxiliary electrode, creating an active surface that effectively absorbs the gas. The screen protects the internal parts of the valve from contamination with atomised titanium. Some results of tests on the absorbing power of atomised titanium obtained with this model are plotted in Fig 3. It was found that when pumping air the lower limit of pressure is below  $2 \times 10^{-5}$  mm Hg. The weight of absorption with a current of 2.5 mA and a voltage of 2.5 kV for various gases is tabulated; the figures relate to a volume of 20 litres with an initial pressure between 60 and 70 microns Hg. The electrical circuit shown diagrammatically in Fig 4 may be used to supply the electrodes of the device. Employing this simple circuit, it was possible to make up a sample titanium absorption pump and instal it in a mercury rectifier type VR-3M as illustrated diagrammatically in Fig 5. The valve was subjected to

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SOV/110-59-6-3/24

An Investigation of a Titanium Absorption Pump

the usual manufacturing cycle of vacuum treatment and forming. After evacuation by a mercury pump, the valve was connected to the absorption pump. Tests were then made on the rectifier on a low-voltage bench and at high voltage using an equivalent circuit. The electric strength was checked periodically by static tests. The valve was maintained for 2000 hours without the mercury pump in use and operated under load for about 400 hours: there was no case of pump failure. When the valve was left for a long time without pumping, leakage caused the internal pressure to rise to some 5 or 10 microns Hg but when the absorption pump was connected the vacuum was soon restored. A defect of the pump is that it absorbs inert gases only very slightly: hence, if there is an appreciable ingress of air, atmospheric argon may accumulate in the valve. The service life of the absorption pump, though not yet established, is likely to be considerable and can probably be made of the order of 10000 hours. The power required for the pump is about

Card 4/5

SOV/110-59-6-3/24

An Investigation of a Titanium Absorption Pump

100 W, most of which is absorbed by the auxiliary electrode. By a slight change in construction the latter could be used as an excitation anode; the power required to operate the pump would then be considerably reduced. One of the advantages of the pump is its high pumping speed at low pressures. A disadvantage is the presence of a high voltage on the auxiliary electrode which, amongst other things, limits the upper pressure to between 200 and 500 microns Hg: beyond this limit corona occurs and atomisation of the electrode is much reduced. There are 5 figures, 1 table and 3 references, 1 of which is Soviet, 1 English and 1 German.

Card 5/5

RODIONOV, V.M.; GRIGOR'YEVA, R.Sh.; BELOV, V.M.

Relation between the structure of organic compounds and their  
odor. Report No.4: Synthesis of 3-(4'-tert-butyl phenyl)-2-  
methyl-propional. Trudy VNIISNDV no.2:19-21 '54. (MIRA 10:7)  
group) (Propionaldehyde)



GRIGOR'YEVA, S.

Fruit growers from the Urals. Zdorov'e 2 no.9:26 S '56. (MIRA 9:10)  
(URAL MOUNTAIN REGION--FRUIT CULTURE)

GRIGOR'YEVA, S.

Vacuum cleaner in the service of science. Znan.sila 35 no.1:  
6-7 Ja '60. (MIRA 13:5)  
(Seed industry)

SAMARINA, V.S.; NOVOZHILOVA, Ye.V.; GRIGOR'YEVA, S.A.

Formation of the salt composition of underground water in some  
regions of Central Asia. Vest. LGU 17 no.12:22-31 '62.

(MIRA 15:7)

(Soviet Central Asia--Water, Underground--Composition)

KUZNETSOV, I.P.; POLAK, A.F.; GRIGOR'YEVA, S.I.

Rapid construction of petroleum refineries in Bashkivia.  
Prom.stroi. 38 no.6:28-29 '60. (MIRA 13:7)

1. Institut BashNIIStroy (for Grigor'yeva).  
(Bashkiria--Petroleum refineries)

GRIGOR'YEVA, S.I., inzh.; FEDORTSEV, I.V., inzh.

Large-block assembly of tubestills. Trudy BashNIISROI no.1:  
109-121 '62. (MIRA 17:3)

ANTONOV, A.S.; LAYKOVA, N.F.; IVANOVA, P.V.; GRIGOR'YEVA, S.P.;  
BELOZERSKIY, A.N., akademik

Changes in the amino acid composition of fibroin of the silkworm  
Bombyx mori L. induced by the analogs of the nitrogen bases of  
DNA and RNA. Dokl. AN SSSR 155 no. 5:1201-1204 Ap '64.  
(MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

BELOUSOV, M.S.; POKLADA, I.I., prof.; BEZRUKIKH, P.S.; BARNGL'TS,  
S.B.; ZLOBINA, P.P.; GRIGOR'YEVA, S.T.; MEDVEDEVA, R.,  
red.; TELEGINA, T., tekhn. red.

[A course in accounting] Kurs bukhalterskogo ucheta. 2.,  
perer. i dop. izd. Moskva, Gosfinizdat, 1963. 488 p.  
(MIRA 16:11)

(Accounting)

KOVALENKO, N.I.; GRIGOR'YEVA, T.A.

Optical activity, density, and molecular weight of oil fractions of  
petroleum from the Saratov field, Report No.5. Uch.zap. Sar.un. Vyp.  
fiz. 56:129-138 '57. (MIRA 12:11)  
(Saratov region—Petroleum)



GRIGOR'YEVA, T.A.

KRISS, A.Ye., RYABTSEVA, Z.S., RUKINA, Ye.A., KIRIK, M. & GRIGOR'YEVA, T.A.

--"Fagin--Complex Preparation for the Treatment of Refractory Infected Wounds."

SO: Byul. Eksper.Biol. i Med. 1944(9).(Quoted in Referaty 1945)

GRIGORIEVA, T.A.

"Innervation Of The Internal Organs." (p.134) by T.A. Grigorieva (Moscow)

SO: Progress of Contemporary Biology (Usp. Sovrem. Biol.) Vol. XXVIII, 1949, No. 1 (4)  
(July-Aug.)

GRIGOR'YEVA, T. A.

29879

Immyervatsiya kapillyarov. doklady akad. nauk SSSR. novaya syeriya, t. LXVIII, No. 3, 1949, s 589-92. - Bibliogr: 11 nazv.

SO: L E T O P I S ' NO. 40

GRIGOR'YEVA, T. A.

Synapse in region of the capillary bed., Uch. zap. Vt. mosk. med inst. 2, 1951  
Capillaries, USSR (600)

GRIGOR'YEVA, T.A.

~~GRIGOR'YEVA, T.A.~~  
Cause of trophic disorders in regions of the body deprived of sensitivity. Doklady Akad. nauk SSSR 78 no.2:387-390 11 May 1951. (CML 20:9)

1. Second Moscow State Medical Institute imeni I.V. Stalin.
2. Presented by Academician A.D. Speranskiy 26 February 1951.

ALCHAY VA, . . .

ALCHAY VA, V. A. -- "Innervation of the Circulatory System." 1952  
15 Sep 52, Second Moscow State Medical Institute I. V. Stalin.  
(Dissertation for the Degree of Doctorate in Medical Sciences).

SO: Vechernaya Moskva January-December 1952

GRIGOR'YEVA, Tat'yana Andreyevna; SHUBIN, A.S., redaktor; SACHEVA, A.I.,  
tekhnicheskiiy redaktor

[Innervation of the blood vessels] Innervatsiya krovenosnykh sosudov.  
Moskva, Gos. izd-vo med. lit-ry, 1954. 373 p. (MLRA 8:3)  
(Blood vessels--Innervation)

DOLGO-SOBUROV, B.A., professor, redaktor; GERBIL'SKIY, N.L., redaktor;  
GRIGOR'YAN, T.A., redaktor; YELISEYEV, V.G., redaktor; ZHDANOV,  
D.A., redaktor; KNOPPE, A.G., redaktor KUPRIYANOV, V.V., redaktor;  
MIKHAYLOV, V.P., redaktor; PRIVESA, M.G., redaktor; STUDITSKIY, A.N.,  
redaktor; SHCHELKUNOVA, S.I., redaktor; KHARASH, G.A., tekhnicheskii redaktor

[Problems in the morphology of the nervous system] Problemy morfologii  
nervnoi sistemy [Leningrad] Gos. izd-vo med. lit-ry, Leningradskoe  
otd-nie, 1956. 179 p. (MIRA 10:2)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for  
Dolgo-Soburov)  
(NERVOUS SYSTEM)



*Grigoreva, T.A.*

USSR/General Division. History. Classics. Personnel.

A-2

Abs Jour: Ref. Zhur. Biologiya, No 4, 1958, 14131.

Author : Grigoreva T.A.

Inst :

Title : I.M. Sechenov and His Thoughts on the Structure of the Nervous System (On the Fiftieth Anniversary of His Death)

Orig Pub: Arkhiv anatomii, gistol. i embriologii, 1956, 33, No 2, 7-13

Abstract: The numerous hypotheses of Sechenov on the structure of the nervous system, which were confirmed by later research, are cited. The under-estimation of Sechenov's hypothesis that the inhibiting fibers are intercentral and end, not in the muscles, but in the corresponding nerve centers, is pointed out. Considerations are cited against the newest propositions on the interchangeability of nerve elements.

Card : 1/1

-7-

ORIGON'YEVA, T.A.; SAVICH, G.A. (Moskva)

Meeting of the Moscow Society of Anatomists, Histologists,  
and Embryologists. Arkh.anat.gist.i embr. 33 no.3:100-101  
J1-S '56. (MIRA 12:11)

(ANATOMY--PERIODICALS)

GRIGOR'YAN, T.A. (Moskva, 1-41, 1-ya Meshshanskaya, d. 90/96  
kv. 9.)

The structure of unmyelinated nerve fibers; review of foreign literature.  
Arkh. anat. gist. i embr. 34 no.1:121-128 Ja-F '57

(MIRA 10:5)

1. Iz kafedry gistologii (zav.-chl.-korr. AN SSSR, zasl. deyat. nauki,  
prof. G.K. Khrushchov) II Moskovskogo gosudarstvennogo meditsinskogo  
instituta im. I.V. Stalina.

(NERVES, anat. and histol.

unmyelinated fibers structure, review)

GRIGOR'YEVA T.A. (Moskva, 1-41, 1-ya Meshchanskaya ul., d.90/96, kv.9)

"Journal of comparative neurology" [in English], Vols.104-105,  
1956. Reviewed by T.A.Grigor'eva. Akh.nnat.gist. 1 embr. 34  
no.6:118-124 E-D '57. (MIRA 11:3)  
(NEUROLOGY--PERIODICALS)

GRIGOR'YEVA, T.A., prof., red.; ZELEENIN, A.V., kand. med. nauk, red.;  
SAVICH, G.A., kand. med. nauk, red.

[Transactions of the First Conference of Young staff Members of  
Morphological Laboratories in Moscow] Trudy pervoy konferentsii  
molodykh nauchnykh sotrudnikov moskovskikh morfologicheskikh  
laboratorii. Pod red. T.A.Grigor'evoi, A.V.Zelenina i G.A.Savich.  
Moskva, Vses. ob-vo anatomov, gistologov i embriologov, 1959. 139 p.  
(MIRA 15:4)

1. Konferentsiya molodykh nauchnykh sotrudnikov moskovskikh mor-  
fologicheskikh laboratoriy. 1st.  
(Morphology(Animals))—Congresses))

GRIGOR'YEV, T.A.: prof.

Mucous membrane. Zderov's 6 no.6:9-10 Jo '60.  
(MUCOUS MEMBRANE)

(MIRA 13:7)

GRIGOR'YEVA, T.G.

Results of testing baits to control agriotes obscurus L. Trudy  
VIZR no.1:157-160 '48. (MIRA 11:7)  
(Click beetles) (Insect baits and repellents)

GRIGOR'YAN, T. G. B 3-1

BC

First cover in the literature of the soil fauna. T. G. Grigor'yan  
(Perestroika, 1984, 681-686; *Soviet & Post-Soviet*, 1984, 681-686).—The  
type of crop has a much greater influence on the quantity and quality  
of the fauna than has the type of soil. C. B. Nosenko

ASD-LLA METALLURGICAL LITERATURE CLASSIFICATION

SECTION	SUBSECTION	CLASSIFICATION	DATE	REMARKS
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GRIGORYEVA, T. G.

USSR/Biology - Hexachlorane as an Insecticide Dec 52

"The Effect of Hexachlorane Deposited in the Ground, on the Fauna of the Soil," T. G. Grigoryeva. (Submitted by the Section of Plant's Protection, All Union Acad of Agric Sci imeni V. I. Lenin)

Dok V-S ord Lenina Akad selkhoz nauk imeni V. I. Lenina, No 12, pp 16-20.

Describes the toxic effects of Hexachlorane on the insect fauna of the soil in selected exptl sections of the Leningrad Oblast. Observations over a period of 3 years, revealed the potency of hexachlorane

24872

in destroying harmful plant-eating insects and predators in and above ground, with little or no effect on rain worms, and some beneficial effect on certain plants, resulting in increased crops of agricultural plants grown on soil treated with hexachlorane.

24872

ORIGOR'YEVA, T.G.; KARPOVA, A.I.

~~\_\_\_\_\_~~  
Feeding specialisation of the frit fly *Oscinella pusilla* Meig. in the trans-  
Volga region. Zool.shur. 32 no.5:893-902 S-O '53. (MLRA 6:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sashchity rasteniy.  
(Volga valley--Frit flies) (Frit flies--Volga valley)

STARK, V.H.; GRIGOR'YEVA, T.O.

In memory of Georgii Konstantinovich Piatnitskii (1900-1951).  
Ent.obos. 33:376-379 '53. (MLBA 7:5)  
(Piatnitskii, Georgii Konstantinovich, 1900-1951)

GRIGOR'YEVA, Tat'yana Grigor'yevna.

[The Outworm *Hadena basilinea* and its control] Zernovye sovki i  
bor'ba s nimi. Moskva, Gos. izd-vo selkhoz. lit-ry, 1958. 56 p.  
(Grain--Diseases and pests) (Outworms) (MIRA 11:10)

GRIGOR'YEVA, T.G., starshiy nauchnyy sotrudnik; GLEBOV, M.A., starshiy nauchnyy sotrudnik; PERSIN, S.A., starshiy nauchnyy sotrudnik; PETRUKHA, O.I., starshiy nauchnyy sotrudnik; SLIVA, I.K.

Practices in effective control of the sugar beet weevil.  
Zashch. rast. ot vred. i bol. 4 no.5:23-25 S-O '59. (MIRA 16:1)

1. Vsesoyuznyy institut zashchity rasteniy (for Grigor'yeva, Glebov, Persin). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy svekly (for Petrukha). 3. Glavnyy agronom inspeksii po sel'skomu khozyaystvu Smelyanskogo rayona, Cherkasskoy oblasti (for Sliva).

(Smela District--Sugar beets--Diseases and pests)  
(Smela District--Weevils--Extermination)

GRIGOR'YEVA, T.G., kand.sel'skokhoz.nauk

Immediate tasks in the protection of grain crops. Zashch. rast.  
ot vred. i bol. 5 no.9:1-3 S '60. (MIRA 15:6)

1. Zaveduyushchiy laboratoriyey po izucheniyu vrediteley  
zernovykh kul'tur Vsesoyuznogo instituta zashchity rasteniy.  
(Kazakhstan--Wheat--Diseases and pests)

16

GRIGOR'YEVA, Z.G.

Some general laws governing the formation of agrobiocoenoses and principles underlying the protection of plants on virgin lands.  
Zhur. ob./biol. 21 no.6:411-418 N-D '60. (MIRA 14:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zashchity rasteniy, Leningrad.

(RECLAMATION OF LAND)

(AGRICULTURAL PESTS)

GRIGOR'YEVA, T.G.

Factors determining methods used to protect grain crops in the regions  
of reclaimed virgin and idle lands. Ent. oboz. 39 no.3:509-520 '60.  
(MIRA 13:9)

1. Vsesoyuznyy institut zashchity rasteniy Vsesoyuznoy akademii  
sel'skokhozyaystvennykh nauk im. Lenina.  
(Kazakhstan--Wheat--Diseases and pests)



GRIGOR'YEVA, T.G.; TEREKHIN, E.S.

Distribution of grain bugs of the genus *Aelia* (Hemiptera, Pentatomidae) in the trans-Volga region and northern Kazakhstan. Ent. oboz. 40 no.1:19-23 '61. (MIRA 14:2)

1. Vsesoyuznyy institut zashchity rasteniy Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni Lenina, Leningrad.  
(Staraya-Poltavka District--Stinkbugs)  
(Karabalykskiy District--Stinkbugs)  
(Wheat--Diseases and pests)

GRIGOR'YEVA, T.G.

Some results of and prospects for studying the grain pests and their control in areas where virgin land is being brought under cultivation. *Veol.zhur.* 41 no.1:3-17 Ja '62. (MIRA 15:4)

1. All-Union Institute of Plant Protection, Leningrad.  
(Virgin Territory--Wheat--Diseases and pests)

GRIGOR'YEVA, T.G.

Investigation of the soil fauna in virgin and cultivated lands of  
the trans-Volga region. Vop. skol. 7:40-41 '62. (MIRA 16:5)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.  
(Volga Valley—Soil fauna)

GRIGOR'JEVA, T.G.

Row crop farming and the main objectives of agricultural  
entomology. Ent. obozr. 41 no.3:485-491 '62. (MIRA 15:10)

1. Vsesoyuznyy institut zashchity rasteniy, Leningrad.  
(Insects, Injurious and beneficial)